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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------|-------------|----------------------|---------------------|------------------|
| 09/871,777 | 06/01/2001 | Bogdan Kosanovic | TI-32882 | 3090 |
| 23494 | 7590 | 09/30/2005 | EXAMINER | |
| TEXAS INSTRUMENTS INCORPORATED | | | SHAH, NILESH R | |
| P O BOX 655474, M/S 3999 | | | | |
| DALLAS, TX 75265 | | | ART UNIT | PAPER NUMBER |
| | | | 2195 | |

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/871,777 | KOSANOVIC, BOGDAN | |
| | Examiner | Art Unit | |
| | Nilesh Shah | 2195 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 July 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 35-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 35-54 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.

- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. Claims 35-54 are presented for examination.

Claim Objections

2. Claim 43 is objected to because it is dependent on a canceled claim 1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).
Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 35,46 and 53 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application 09/871775 and 09/871776

Although the conflicting claims are not identical, they are not patentably distinct from each other because the examiner can ascertain no difference between the claim of the present application and that of copending Application No. 09/871775 and 09/871776. It is noted that the minor difference encompass replacement of the recitation of the limitations in the claims and it appears to be substantially the same or duplicate or in some instance obvious over one another.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 35-45 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- (a) In claim 35, the term "anticipating the exceedance" (line 7) is indefinite because it is not made clear how one would anticipate the exceedance.

Claim Rejections - 35 U SC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
7. Claims 35-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertazzi et al. (US 6,370,560, hereinafter Robertazzi) in view of Maher et al (6,301,603) (hereinafter Maher).
8. As per claim 35, Robertazzi teaches the invention substantially as claimed including a method of managing a processor, comprising:

providing a plurality of channels in a processor (col. 3 lines 1-8; col. 6 lines 20-33; col. 5 lines 51-65; col. 11 lines 55-67);
executing a plurality of algorithms in one or more said channels that use processing resources of the processor (col. 2 lines 52-62; col. 5 lines 51-60; col. 6 lines 20-33);
fixing a high usage threshold of the processing resources for use by the algorithms exceeding, or anticipating the exceedance of, the high usage threshold by said executing of the algorithms (col. 7 lines 11-23; col. 8 lines 34-60; col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20); and

allocating the processing resources among the algorithms based on an estimated use of the processing resources by each algorithm and an achieved performance of each algorithm so as not to exceed the high usage threshold by a cumulative use of the processing resources by the executing algorithms (col. 8 lines 34-60; col. 5 lines 51-60; col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20).

Robertazzi does not specifically teach the use of estimating the amount of the resources needed. However it is well known to one of ordinary skill in the art that the amount of resources needed can be an estimate. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the option of estimating the amount to the existing system of Robertazzi because it would increase the accuracy of the amount of resources needed thus improving overall planning of the system and resources

9. Robertazzi does not specifically teach the processor being a signal processor for providing signal processing.

Maher teaches the load balancing and resource allocation involving a digital signal processor for dynamic and scorable processing (col. 2 lines 15-25; col. 3 lines 7-21; col. lines 10-22).

10. It has been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Maher and Robertazzi because Maher's method of including the feature of the processor being a signal processor for providing signal processing to the existing load balancing and resource allocation system would improve Robertazzi's system because this would allow the system to support more tasks as needed (col. 2 lines 15-25).

11. As per claim 36, Robertazzi teaches a method wherein of allocating further comprises allocating the processing resources among the algorithms based on an environmental input (col. 8 lines 34-60; col. 5 lines 51-60; col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20).
12. As per claim 37, Robertazzi teaches a method wherein said allocating comprises prioritizing the allocation of the processing resources among the algorithms that exhibit greater requirements for processing resources based on the estimated use of each algorithm and the achieved performance of each algorithm (col. 2 lines 52-62; col. 5 lines 52-58; col. 8 lines 1-5; col. 11 lines 15-26; col. 14 lines 5-53; col. 16 lines 19- 28).
13. As per claim 38, Robertazzi teaches a method wherein said allocating further comprises: de-prioritizing the allocation of the processing resources among the algorithms that exhibit lesser requirements for processing resources based on the estimated use of each algorithm and the achieved performance of each algorithm (col. 2 lines 52-62; col. 5 lines 52-58; col. 8 lines 1-5; col. 11 lines 15-26).
14. As per claim 39, Robertazzi teaches a method wherein said allocating comprises removing a portion of the allocated processing resources from each algorithm that can execute using fewer processing resources (col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20).

15. As per claim 40, Robertazzi teaches a method further comprising:
performing performance-degrading re-allocation of the processing resources when a cumulative amount of the processing resources are required that would exceed the high usage threshold (col. 5 lines 51-60; col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20).
16. As per claim 41, Robertazzi teaches a method wherein said allocating further comprises setting a low usage threshold of the processing resources; and re-allocating said processing resources to the algorithms when a cumulative usage of said processing resources by the algorithms fall below said low usage threshold based on the estimated consumption of said processing resources by each algorithm and the achieved performance of each algorithm (col. 3 lines 9-14; col. 5 lines 23-40; col. 8 lines 34-50).
17. As per claim 42, Robertazzi teaches a method wherein said executing the plurality of algorithms comprises executing one or more function of each algorithm that are capable of being managed (col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20).
18. As per claim 43, Robertazzi teaches a method comprising:
storing an estimate of a maximum required processing resource for execution of each algorithm and a minimum required processing resource for execution of each algorithm (col. 8 lines 34-60; col. 5 lines 51-60; col. 3 lines 1-8; col. 6 lines 20-33).

19. As per claim 44, Robertazzi teaches a method further comprising:
 - providing an original estimate of maximum processing resources required for each algorithm (col. 2 lines 52-62; col. 5 lines 51-60; col. 6 lines 20-33);
 - monitoring actual use of the processing resources by the execution of each respective algorithm (col. 3 lines 1-8; col. 6 lines 20-33); and
 - providing the estimated consumption for each respective algorithm based on the original estimate and the actual use of the processing resources (col. 8 lines 1-4; col. 11 lines 40-56; col. 14 line 10-55; col. 22 lines 5-20).
20. As per claim 45, Robertazzi teaches a method wherein the executing a plurality of algorithms comprises executing a one or more functions of each algorithm concurrently (col. 11 lines 15-26; col. 14 lines 5-53; col. 16 lines 19- 28).
21. Claims 46- 49 are rejected based on same rejection as claims 35- 38 above.
22. Claims 50-52 are rejected based on the same rejection as claims 40-42 above.
23. Claims 53-54 are rejected based on the same rejection as claims 35 and 41 above.

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh Shah whose telephone number is (571)272-3771. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nilesh Shah
Examiner
Art Unit 2195

NS
September 26, 2005


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SUPERVISORY PATENT EXAMINER
571-272-3756